In the Claims

1. [Currently Amended] A semiconductor processor system comprising:

a process chamber adapted to process at least one semiconductor workpiece using a process fluid;

a connection coupled with the process chamber and configured to receive the process fluid;

a sensor coupled with the connection and configured to output a signal indicative of the process fluid;

a control system coupled with the sensor and configured to control at least one operation of the semiconductor processor system responsive to the signal;

wherein the sensor is configured to monitor turbidity of the process fluid; ~~and~~

wherein the connection is adapted to couple with a process fluid supply and is configured to supply process fluid from the process fluid supply to the process chamber; and

a flush system coupled with the connection and configured to selectively flush the connection.

2. [Original] The system according to claim 1 wherein the connection comprises a connection of a sampling system configured to provide the process fluid in a substantially static state.

3. [Previously Presented] The system according to claim 2 wherein the control system is configured to compare the substantially static process fluid with a signature to determine at least one characteristic of the process fluid.

4. [Original] The system according to claim 3 wherein the control system is configured to control a flow rate of the process fluid into the process chamber responsive to the comparison.

5. [Original] The system according to claim 4 wherein the control system is configured to halt processing within the process chamber responsive to the comparison.

Claims 6-9 [canceled].

10. [Original] The system according to claim 1 wherein the sensor is configured to output a signal indicative of accumulation of particulate matter within the connection.

11. [Original] The system according to claim 1 wherein the control system is configured to process the signal to monitor processing of the at least one semiconductor workpiece within the process chamber.

12. [Canceled].

13. [Currently Amended] The system according to claim [[12]] 1 wherein the flush system is configured to flush the connection with at least one of the process fluid and a rinse fluid.

14. [Currently Amended] The system according to claim [[12]] 1 wherein the flush system is configured to flush the connection responsive to control from the control system.

15. [Original] The system according to claim 1 further comprising a mixing system configured to mix plural components of the process fluid and the control system is configured to control the mixing system.

16. [Original] The system according to claim 1 further comprising a storage device configured to store historical data corresponding to the process fluid.

17. [Original] The system according to claim 1 wherein the process chamber comprises a process chamber of a chemical-mechanical polishing processor.

18. [Previously Presented] A semiconductor processor system comprising:

a process chamber adapted to process at least one semiconductor workpiece using a process fluid;

a connection coupled with the process chamber and configured to transport the process fluid;

a sampling system coupled with the connection and configured to receive a sample of the process fluid;

a sensor coupled with the sampling system and configured to output a signal indicative of turbidity of the sample of the process fluid; and

a control system coupled with the sensor and configured to control at least one operation of the semiconductor processor system responsive to the signal.

19. [Currently Amended] The system according to claim 18 wherein the ~~sampling system is configured to provide~~ sample of the process fluid is in a substantially static state in the sampling system.

20. [Original] The system according to claim 19 wherein the control system is configured to compare the sample of the process fluid with a signature to determine at least one characteristic of the process fluid.

21. [Canceled].

22. [Previously Presented] The system according to claim 18 wherein the sensor is configured to monitor a percentage of solids present in a liquid of the process fluid to provide information regarding the turbidity of the process fluid.

23. [Original] The system according to claim 18 wherein the control system is configured to control the sampling system to draw the sample of the process fluid.

24. [Original] The system according to claim 18 wherein the control system is configured to monitor operation of the semiconductor processor system and to control the sampling system to draw the sample during defined operations of the semiconductor processor system.

25. [Original] The system according to claim 18 further comprising a storage device coupled with the sensor and configured to store historical data corresponding to the process fluid.

26. [Original] The system according to claim 18 wherein the process chamber comprises a process chamber of a chemical-mechanical polishing processor.

27. [Previously Presented] A semiconductor processor system comprising:

a process chamber adapted to process at least one semiconductor workpiece;

a process fluid system including:

a mixer configured to mix a plurality of components of a process fluid;

a connection configured to supply the process fluid to the process chamber; and

a sensor configured to output a signal indicative of the process fluid;

a control system coupled with the sensor and configured to control mixing of the components responsive to the signal; and

wherein the sensor is coupled with the connection and further comprising another sensor coupled with a supply connection configured to supply one of the components to the mixer.

28. [Previously Presented] The system according to claim 27 wherein the process fluid system comprises at least one metering device configured to permit flow of at least one of the components and the control system is configured to control the metering device to control a flow rate of the component responsive to the signal.

29. [Canceled].

30. [Canceled].

31. [Previously Presented] The system according to claim 27 wherein the sensor is configured to monitor turbidity of the process fluid.

32. [Previously Presented] The system according to claim 27 further comprising a storage device coupled with the sensor and configured to store historical data corresponding to the process fluid.

33. [Previously Presented] The system according to claim 27 wherein the process chamber comprises a process chamber of a chemical-mechanical polishing processor.

Claims 34-38 [canceled].

39. [Previously Presented] A semiconductor processor system comprising:

a process chamber adapted to process at least one semiconductor workpiece using a process fluid;

a process fluid system including:

a connection coupled with the process chamber and configured to transport process fluid relative to the process chamber;

a flush system configured to flush the connection using a flush fluid; and

a sensor coupled with the flush system and configured to output a signal indicative of the flush fluid;

a control system coupled with the sensor and configured to control the flush system to flush the connection responsive to the signal; and

wherein the control system is configured to control the flush system to prime the connection responsive to a start-up operation of the semiconductor processor system.

40. [Canceled].

41. [Previously Presented] The system according to claim 39 wherein the flush system is configured to prime the connection with flush fluid comprising process fluid responsive to the start-up operation.

42. [Previously Presented] The system according to claim 39 wherein the sensor is configured to monitor turbidity of the flush fluid and the control system is configured to control the flush system responsive to the turbidity of the flush fluid.

43. [Previously Presented] The system according to claim 39 wherein the control system is configured to control the flush system to rinse the connection responsive to a halt operation of the semiconductor processor system.

44. [Previously Presented] The system according to claim 43 wherein the flush system is configured to rinse the connection with flush fluid comprising rinse fluid responsive to the halt operation.

45. [Previously Presented] The system according to claim 43 wherein the sensor is configured to monitor turbidity of the flush fluid and the control system is configured to control the flush system responsive to the turbidity of the flush fluid.

46. [Previously Presented] The system according to claim 39 wherein the sensor is configured to monitor turbidity of the flush fluid.

47. [Previously Presented] The system according to claim 39 wherein the process fluid system is configured to supply process fluid to the process chamber.

48. [Previously Presented] The system according to claim 39 wherein the process chamber comprises a process chamber of a chemical-mechanical polishing processor.

49. [Original] A semiconductor processor system comprising:

a process chamber adapted to process at least one semiconductor workpiece using a process fluid;

a connection configured to transport the process fluid relative to the process chamber;

a sensor coupled with the connection and configured to output a signal indicative of accumulation of particulate matter within the connection; and

a control system coupled with the sensor and configured to monitor the accumulation responsive to the signal.

50. [Original] The system according to claim 49 wherein the connection is arranged in a substantially horizontal orientation.

51. [Original] The system according to claim 50 wherein the sensor is arranged to monitor accumulation in a substantially vertical orientation with respect to the connection.

52. [Original] The system according to claim 49 further comprising a flush system configured to flush the connection and wherein the control system is configured to control the flush system responsive to monitoring the accumulation.

53. [Original] The system according to claim 49 further comprising a recirculation system configured to recirculate process fluid within the connection and wherein the control system is configured to control the recirculation system responsive to monitoring the accumulation.

54. [Original] The system according to claim 49 wherein the connection comprises a connection configured to provide process fluid to the process chamber.

55. [Original] The system according to claim 49 wherein the connection comprises a drain connection configured to receive process fluid from the process chamber.

56. [Original] The system according to claim 49 wherein the sensor is configured to monitor turbidity of the process fluid.

57. [Original] The system according to claim 49 wherein the process chamber comprises a process chamber of a chemical-mechanical polishing processor.

58. [Currently Amended] A ~~system configured to provide a~~ semiconductor workpiece process fluid system comprising:

a connection configured to transport a semiconductor workpiece process fluid relative to a semiconductor process chamber;

a sensor oriented relative to the connection and configured to output a signal indicative of the semiconductor workpiece process fluid;

a control system coupled to receive the signal from the sensor and configured to monitor the semiconductor workpiece process fluid using the signal; and

a drain coupled to the connection, and the control system is configured to control the drain to remove at least a portion of the semiconductor workpiece process fluid from the system responsive to the signal from the sensor.

59. [Previously Presented] The system according to claim 58 wherein the sensor is configured to output the signal indicative of turbidity of the semiconductor workpiece process fluid.

60. [Previously Presented] The system according to claim 58 wherein the control system is configured to compare the signal with a signature to monitor the semiconductor workpiece process fluid.

61. [Previously Presented] The system according to claim 58 further comprising at least one metering device configured to permit flow of a component of the semiconductor workpiece process fluid, and the control system is configured to control the metering device to control a flow rate of the component responsive to the signal.

62. [Previously Presented] The system according to claim 58 wherein the process chamber comprises a process chamber of a chemical-mechanical polishing processor.

63. [Previously Presented] A system configured to provide a semiconductor workpiece process fluid comprising:

a mixer configured to mix a plurality of components of a semiconductor workpiece process fluid;

a sensor configured to monitor turbidity of the semiconductor workpiece process fluid and to output a signal indicative of the turbidity of the semiconductor workpiece process fluid; and

a control system coupled with the sensor and configured to control mixing of the components responsive to the signal.

64. [Previously Presented] The system according to claim 63 wherein the system comprises at least one metering device configured to flow one of the components, and the control system is configured to control the metering device to control a flow rate of the component responsive to the signal.

65. [Previously Presented] The system according to claim 63 further comprising another sensor configured to output another signal indicative of one of the components.

66. [Canceled].

67. [Previously Presented] The system according to claim 63 wherein the process chamber comprises a process chamber of a chemical-mechanical polishing processor.

Claims 68-129 [canceled].

130. [Previously Presented] A semiconductor processor system comprising:

a process chamber adapted to process at least one semiconductor workpiece using a process fluid;

a connection coupled with the process chamber and configured to receive the process fluid;

a sensor coupled with the connection and configured to output a signal indicative of the process fluid;

a control system coupled with the sensor and configured to control at least one operation of the semiconductor processor system responsive to the signal;

wherein the connection comprises a connection of a sampling system configured to provide the process fluid in a substantially static state;

wherein the control system is configured to compare the substantially static process fluid with a signature to determine at least one characteristic of the process fluid; and

wherein the control system is configured to control a flow rate of the process fluid into the process chamber responsive to the comparison.

131. [Previously Presented] The system according to claim 130 wherein the control system is configured to halt processing within the process chamber responsive to the comparison.

132. [Canceled].

133. [Previously Presented] A semiconductor processor system comprising:

a process chamber adapted to process Previously Presented semiconductor workpieces using a process fluid;

a connection coupled with the process chamber and configured to receive the process fluid;

a sensor coupled with the connection and configured to output a signal indicative of the process fluid;

a control system coupled with the sensor and configured to control at least one operation of the semiconductor processor system responsive to the signal; and

a flush system coupled with the connection and configured to selectively flush the connection with a rinse fluid different than the process fluid.

134. [Previously Presented] The system according to claim 133 wherein the flush system is configured to flush the connection with the process fluid.

135. [Previously Presented] The system according to claim 133 wherein the control system is configured to control the flush system responsive to the signal comprising turbidity information of the process fluid provided by the sensor.

Claims 136-137 [canceled].

138. [Previously Presented] A system configured to provide a semiconductor workpiece process fluid comprising:

a connection configured to transport a semiconductor workpiece process fluid relative to a semiconductor process chamber;

a sensor oriented relative to the connection and configured to output a signal indicative of turbidity of the semiconductor workpiece process fluid;

a control system coupled to receive the signal from the sensor and configured to monitor the semiconductor workpiece process fluid using the signal; and

at least one metering device configured to permit flow of a component of the semiconductor workpiece process fluid, and the control system is configured to control the metering device to control a flow rate of the component responsive to the signal.

139. [Currently Amended] A semiconductor processor system comprising:

a process chamber adapted to process at least one semiconductor workpiece using a process fluid;

a process fluid system coupled with the process chamber and including:

a recirculation system ~~configured to recirculate~~ recirculating the process fluid to a homogeneous level; and

a sensor coupled with the recirculation system and configured to output a signal indicative of turbidity of the process fluid; and

a control system coupled with the sensor and configured to control recirculation of the process fluid using the recirculation system responsive to the signal; and

wherein the control system is configured to control the recirculation system to recirculate the process fluid responsive to the turbidity of the process fluid being out of specification.

140. [Currently Amended] A semiconductor processor system comprising:

a process chamber adapted to process at least one semiconductor workpiece using a process fluid;

a process fluid system coupled with the process chamber and including:

a recirculation system ~~configured to recirculate~~ recirculating the process fluid to a homogeneous level; and

a sensor coupled with the recirculation system and configured to output a signal indicative of the process fluid; and

wherein the sensor is configured to monitor turbidity of the process fluid.

141. [Previously Presented] A semiconductor processor system comprising:

a process chamber adapted to process at least one semiconductor workpiece;

a process fluid system including:

a mixer configured to mix a plurality of components of a process fluid;

a connection configured to supply the process fluid to the process chamber; and

a sensor configured to monitor turbidity of the process fluid and to output a signal indicative of the turbidity of the process fluid; and

a control system coupled with the sensor and configured to control mixing of the components responsive to the signal.

142. [Previously Presented] A system configured to provide a semiconductor workpiece process fluid comprising:

a mixer configured to mix a plurality of components of a semiconductor workpiece process fluid;

a sensor configured to output a signal indicative of one of the components of the semiconductor workpiece process fluid;

a control system coupled with the sensor and configured to control mixing of the components responsive to the signal; and

at least one metering device configured to flow the one of the components;

wherein the control system is configured to control the metering device to control a flow rate of the one of the components responsive to the signal.

143. [Previously Presented] A system configured to provide a semiconductor workpiece process fluid comprising:

a mixer configured to mix a plurality of components of a semiconductor workpiece process fluid;

a first sensor configured to output a signal indicative of the semiconductor workpiece process fluid;

another sensor configured to output another signal indicative of one of the components; and

a control system coupled with the sensor and configured to control mixing of the components responsive to the signal.

Claims 144-151 [canceled].

152. [Previously Presented] The system according to claim 49 wherein gravity causes the accumulated particulate matter to accumulate within the connection.

153. [Previously Presented] The system according to claim 49 wherein the sensor is configured to output the signal indicative of accumulation of particulate matter within a portion of the connection arranged to transport the process fluid in a substantially horizontal direction.

154. [Previously Presented] The system of claim 138 wherein the connection is configured to supply the process fluid to the process chamber.

155. [Previously Presented] The system of claim 138 wherein the at least one metering device is configured to permit flow of only the component of the process fluid.

156. [Previously Presented] The system of claim 138 wherein the at least one metering device is configured to permit flow of the component to be mixed with other components of the process fluid being supplied to the semiconductor process chamber.

157. [Previously Presented] The system of claim 139 wherein the recirculation system is configured to recirculate the process fluid to the homogeneous level to be used for processing of semiconductor workpieces.

158. [Previously Presented] The system of claim 139 wherein the recirculation system is configured to recirculate the process fluid to the homogeneous level to provide the process fluid having a desired turbidity for application to the process chamber.

159. [Previously Presented] The system of claim 139 wherein the recirculation system is configured to recirculate the process fluid to the homogeneous level to provide the process fluid having a turbidity within a desired range for application to the process chamber.

160. [Previously Presented] The system of claim 140 wherein the recirculation system is configured to recirculate the process fluid to the homogeneous level to be used for processing of semiconductor workpieces.

161. [Previously Presented] The system of claim 140 wherein the recirculation system is configured to recirculate the process fluid to the homogeneous level to provide the process fluid having a desired turbidity for application to the process chamber.

162. [Previously Presented] The system of claim 140 wherein the recirculation system is configured to recirculate the process fluid to the homogeneous level to provide the process fluid having a turbidity within a desired range for application to the process chamber.

163. [Previously Presented] A semiconductor processor system comprising:

a process chamber adapted to process at least one semiconductor workpiece using a process fluid;

a connection coupled with the process chamber and configured to receive the process fluid;

a sensor coupled with the connection and configured to output a signal indicative of the process fluid;

a control system coupled with the sensor and configured to control at least one operation of the semiconductor processor system responsive to the signal;

wherein the sensor is configured to monitor turbidity of the process fluid;

wherein the connection comprises a connection of a sampling system configured to provide the process fluid in a substantially static state;

wherein the control system is configured to compare the substantially static process fluid with a signature to determine at least one characteristic of the process fluid; and

wherein the control system is configured to control a flow rate of the process fluid into the process chamber responsive to the comparison.

164. [Previously Presented] The system of claim 163 wherein the control system is configured to halt processing within the process chamber responsive to the comparison.

165. [Previously Presented] A semiconductor processor system comprising:

a process chamber adapted to process at least one semiconductor workpiece using a process fluid;

a connection coupled with the process chamber and configured to receive the process fluid;

a sensor coupled with the connection and configured to output a signal indicative of the process fluid;

a control system coupled with the sensor and configured to control at least one operation of the semiconductor processor system responsive to the signal;

wherein the sensor is configured to monitor turbidity of the process fluid; and

a flush system coupled with the connection and configured to selectively flush the connection.

166. [Previously Presented] The system of claim 165 wherein the flush system is configured to flush the connection with a rinse fluid different than the process fluid.

167. [Previously Presented] The system of claim 165 wherein the flush system is configured to flush the connection responsive to control from the control system.

168. [Currently Amended] A semiconductor processor system comprising:

a process chamber adapted to process at least one semiconductor workpiece using a process fluid;

a connection coupled with the process chamber and configured to receive the process fluid;

a sensor coupled with the connection and configured to output a signal indicative of the process fluid;

a control system coupled with the sensor and configured to control at least one operation of the semiconductor processor system responsive to the signal;

wherein the sensor is configured to monitor turbidity of the process fluid; and

a mixing system configured to mix plural components of the process fluid and the control system is configured to control the mixing system to mix the plural components using the signal indicative of the process fluid.

169. [Previously Presented] The system according to claim 20 wherein the control system is configured to control a flow rate of the process fluid into the process chamber responsive to the comparison.

170. [Previously Presented] The system of claim 31 wherein the sensor is configured to monitor a percentage of solids present within a liquid of the process fluid to monitor the turbidity of the process fluid.

171. [Previously Presented] The system of claim 63 wherein the sensor is configured to monitor a percentage of solids present within a liquid of the process fluid to monitor the turbidity of the process fluid.

172. [Previously Presented] The system of claim 138 wherein the sensor is configured to monitor a percentage of solids present within a liquid of the process fluid to output the signal indicative of the turbidity of the process fluid.

173. [Previously Presented] The system of claim 139 wherein the sensor is configured to monitor a percentage of solids present within a liquid of the process fluid to output the signal indicative of the turbidity of the process fluid.

174. [Previously Presented] The system of claim 140 wherein the sensor is configured to monitor a percentage of solids present within a liquid of the process fluid to monitor the turbidity of the process fluid.

175. [Previously Presented] The system of claim 141 wherein the sensor is configured to monitor a percentage of solids present within a liquid of the process fluid to monitor the turbidity of the process fluid.

176. [Canceled].

177. [Previously Presented] The system of claim 165 wherein the sensor is configured to monitor a percentage of solids present within a liquid of the process fluid to monitor the turbidity of the process fluid.

178. [Previously Presented] The system of claim 168 wherein the sensor is configured to monitor a percentage of solids present within a liquid of the process fluid to monitor the turbidity of the process fluid.

179. [Previously Presented] A semiconductor processor system comprising:

a process chamber adapted to process at least one semiconductor workpiece using a process fluid;

a process fluid system including:

a connection coupled with the process chamber and configured to transport process fluid relative to the process chamber;

a flush system configured to flush the connection using a flush fluid; and

a sensor coupled with the flush system and configured to output a signal indicative of the flush fluid; and

a control system coupled with the sensor and configured to control the flush system to flush the connection responsive to the signal; and

wherein the control system is configured to control the flush system to rinse the connection responsive to a halt operation of the semiconductor processor system.

180. [Previously Presented] The system of claim 179 wherein the flush system is configured to rinse the connection with flush fluid comprising rinse fluid responsive to the halt operation.

181. [Previously Presented] The system of claim 179 wherein the sensor is configured to monitor turbidity of the flush fluid and the control system is configured to control the flush system responsive to the turbidity of the flush fluid.